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GOODWIN, AVERY

<130> DALHO1270-2

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<141> 2001-01-31

<150> PCT/US99/07546

<151> 1999-04-06

<160> 23

&lt;170&gt; PatentIn Ver. 3.2

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Val Gly Glu Val Leu Glu Glu Arg Ile Asn Lys Pro Lys Ile Ala Cys
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Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn
                      35                      40                      45

Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Leu Lys Lys
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His Ser Cys Lys Met Phe Asp Ser His Tyr Glu Phe Ser Ser Glu Glu
          20          25          30

Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn
      35          40          45

Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Leu Lys Lys
  50          55          60

Gln Ile Ala Ala Val Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala
  65          70          75          80

Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro
          85          90          95

His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg
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Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser  
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 Met Gln Arg Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
 130 135 140  
 Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
 145 150 155 160  
 Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg  
 165 170 175  
 Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
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 Trp Leu  
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 Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
 35 40 45  
 Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Val Lys Asn  
 50 55 60  
 Gln Ile Ala Thr His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
 65 70 75 80  
 Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
 85 90 95  
 His Gly His Tyr Met Gln Asn Leu Tyr Ser Glu Ser Tyr Lys Val Arg  
 100 105 110  
 Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser  
 115 120 125  
 Met Gln Lys Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
 130 135 140  
 Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
 145 150 155 160

Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Ile Leu Glu Gln Arg  
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 20 25 30

Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
 35 40 45

Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Val Lys Asn  
 50 55 60

Gln Ile Ala Thr His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
 65 70 75 80

Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
 85 90 95

His Gly His Tyr Met Gln Asn Leu Tyr Ser Glu Ser Tyr Lys Val Arg  
 100 105 110

Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser  
 115 120 125

Met Gln Lys Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
 130 135 140

Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
 145 150 155 160

Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Ile Leu Glu Gln Arg  
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Ala Glu Ala Ser  
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           20                  25                  30  
 Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Pro Tyr Asn  
       35                  40                  45  
 Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Leu Lys Lys  
   50                  55                  60  
 Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
  65                  70                  75                  80  
 Ser Ala Leu Met Val Val Cys Ser Leu Lys Pro Ser Glu Leu Ser Pro  
           85                  90                  95  
 His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
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 Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser  
       115                  120                  125  
 Met Gln Lys Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
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 Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
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 Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg  
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                   20                  25                  30  
 Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
                   35                  40                  45  
 Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Leu Lys Lys  
                   50                  55                  60  
 Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
                   65                  70                  75                  80  
 Ser Ala Leu Met Val Val Cys Ser Leu Lys Pro Ser Glu Leu Leu Pro  
                   85                  90                  95  
 His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
                   100                  105                  110  
 Val Ile Pro Ser Phe Thr Gln Met Leu Gly Val Arg Phe Asn His Ser  
                   115                  120                  125  
 Met Gln Arg Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
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 Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
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 Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
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<213> *Helicobacter pylori*

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                   20                  25                  30  
 Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
                   35                  40                  45

Thr Gln Pro Trp His Phe Val Met Val Ala Asn Lys Asp Leu Lys Lys  
 50 55 60  
 Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
 65 70 75 80  
 Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
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 His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
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 Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
 35 40 45  
 Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Leu Lys Lys  
 50 55 60  
 Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
 65 70 75 80  
 Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
 85 90 95  
 Tyr Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
 100 105 110  
 Val Ile Pro Ser Phe Ala Gln Met Leu Gly Thr Arg Phe Asn His Ser  
 115 120 125  
 Met Gln Arg Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
 130 135 140  
 Val Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
 145 150 155 160  
 Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg  
 165 170 175  
 Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
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Ala Glu Ala Ser Gln Lys Ser Arg Lys Ser Lys Val Asp Ala Ile Thr  
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Trp Leu  
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<213> *Helicobacter pylori*

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Met Lys Phe Leu Asp Gln Glu Lys Arg Arg Gln Leu Leu Asn Glu Arg  
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His Ser Cys Lys Met Phe Asp Ser His Tyr Glu Phe Ser Ser Glu Glu  
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Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
 35 40 45

Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Leu Lys Lys  
 50 55 60

Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
 65 70 75 80

Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
 85 90 95

Tyr Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
 100 105 110

Val Ile Pro Ser Phe Ala Gln Met Leu Gly Thr Arg Phe Asn His Ser  
 115 120 125

Met Gln Arg Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
 130 135 140

Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
 145 150 155 160

Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg  
 165 170 175

Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
 180 185 190

Ala Glu Ala Ser Gln Lys Ser Arg Lys Ser Lys Val Asp Ala Ile Thr  
 195 200 205

Trp Leu  
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           20                  25                  30  
 Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
       35                  40                  45  
 Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Val Lys Lys  
   50                  55                  60  
 Gln Ile Ala Val His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Thr  
   65                  70                  75                  80  
 Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
           85                  90                  95  
 His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
           100                  105                  110  
 Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser  
       115                  120                  125  
 Met Gln Lys Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
   130                  135                  140  
 Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
  145                  150                  155                  160  
 Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Ile Leu Glu Glu Arg  
           165                  170                  175  
 Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
       180                  185                  190  
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 Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
                   35                                  40                                  45  
 Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Val Lys Lys  
                   50                                  55                                  60  
 Gln Ile Ala Val His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
                   65                                  70                                  75                                  80  
 Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
                                   85                                  90                                  95  
 His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
                                   100                                  105                                  110  
 Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser  
                                   115                                  120                                  125  
 Met Gln Lys Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
                   130                                  135                                  140  
 Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
                   145                                  150                                  155                                  160  
 Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Ile Leu Glu Glu Arg  
                                   165                                  170                                  175  
 Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
                                   180                                  185                                  190  
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                   20                                  25                                  30  
 Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Cys Asn  
                   35                                  40                                  45

Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Leu Lys Lys  
 50 55 60  
 Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
 65 70 75 80  
 Ser Ala Leu Met Val Val Cys Ser Leu Lys Pro Ser Glu Leu Leu Pro  
 85 90 95  
 His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
 100 105 110  
 Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser  
 115 120 125  
 Met Gln Arg Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Thr Val  
 130 135 140  
 Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
 145 150 155 160  
 Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg  
 165 170 175  
 Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
 180 185 190  
 Ala Glu Ala Ser Gln Lys Ser Arg Lys Ser Lys Val Asp Ala Ile Thr  
 195 200 205  
 Trp Leu  
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 Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
 35 40 45  
 Thr Gln Pro Trp His Phe Val Met Val Thr Asn Lys Asp Leu Lys Lys  
 50 55 60  
 Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
 65 70 75 80  
 Ser Ala Leu Met Val Val Cys Ser Leu Lys Pro Ser Glu Leu Leu Pro  
 85 90 95

His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
 100 105 110  
 Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser  
 115 120 125  
 Met Gln Arg Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
 130 135 140  
 Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
 145 150 155 160  
 Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg  
 165 170 175  
 Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
 180 185 190  
 Ala Glu Ala Ser Gln Lys Ser Arg Lys Ser Lys Val Asp Ala Ile Thr  
 195 200 205  
 Trp Leu  
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 Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
 35 40 45  
 Thr Gln Pro Trp His Phe Val Ile Val Thr Ser Lys Asp Leu Lys Asn  
 50 55 60  
 Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
 65 70 75 80  
 Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
 85 90 95  
 His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
 100 105 110  
 Val Ile Pro Ser Phe Ser Gln Met Leu Gly Val Arg Phe Asn His Ser  
 115 120 125

Met Gln Lys Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
 130 135 140

Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
 145 150 155 160

Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg  
 165 170 175

Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
 180 185 190

Ala Glu Ala Ser Gln Lys Ser Gly Lys Ser Lys Val Asp Ala Ile Thr  
 195 200 205

Trp Leu  
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 20 25 30

Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
 35 40 45

Thr Gln Pro Trp His Phe Val Ile Val Thr Ser Lys Asp Leu Lys Asn  
 50 55 60

Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
 65 70 75 80

Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
 85 90 95

His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
 100 105 110

Val Ile Pro Ser Phe Ser Gln Met Leu Gly Val Arg Phe Asn His Ser  
 115 120 125

Met Gln Lys Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
 130 135 140

Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
 145 150 155 160

Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg  
 165 170 175

Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
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Ala Glu Ala Ser Gln Lys Ser Arg Lys Ser Lys Val Asp Ala Ile Thr  
 195 200 205

Trp Leu  
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<210> 17

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Met Lys Phe Leu Asp Gln Glu Lys Arg Arg Gln Leu Leu Asn Glu Arg  
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 20 25 30

Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
 35 40 45

Thr Arg Pro Trp His Phe Val Val Val Thr Asn Lys Asp Leu Glu Lys  
 50 55 60

Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
 65 70 75 80

Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
 85 90 95

His Ser His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
 100 105 110

Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser  
 115 120 125

Met Gln Lys Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
 130 135 140

Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
 145 150 155 160

Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg  
 165 170 175

Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
 180 185 190

Ala Glu Ala Ser Gln Lys Ser Arg Lys Ser Lys Val Asp Ala Ile Thr  
 195 200 205

Trp Leu  
210

<210> 18

<211> 210

<212> PRT

<213> *Helicobacter pylori*

<400> 18

Met Lys Phe Leu Asp Gln Glu Lys Arg Arg Gln Leu Leu Asn Glu Arg  
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His Ser Cys Lys Met Phe Asp Ser His Tyr Glu Phe Ser Ser Thr Glu  
20 25 30

Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn  
35 40 45

Thr Gln Pro Trp His Phe Val Val Val Thr Asn Lys Asp Leu Lys Lys  
50 55 60

Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala  
65 70 75 80

Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro  
85 90 95

His Ser His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg  
100 105 110

Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser  
115 120 125

Met Gln Lys Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val  
130 135 140

Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile  
145 150 155 160

Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg  
165 170 175

Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val  
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Ala Glu Ala Ser Gln Lys Ser Arg Lys Ser Lys Val Asp Ala Ile Thr  
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Trp Leu  
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<210> 19

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20

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<220>  
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<400> 22  
 Xaa Asp Ser Cys Xaa Ile  
 1 5

<210> 23  
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&lt;212&gt; PRT

<213> *Helicobacter pylori*

&lt;400&gt; 23

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Met Lys Phe Leu Asp Gln Glu Lys Arg Arg Gln Leu Leu Asn Glu Arg
 1          5          10          15

His Ser Cys Lys Met Phe Asp Ser His Tyr Glu Phe Ser Ser Thr Glu
      20          25          30

Leu Glu Glu Ile Ala Glu Ile Ala Arg Leu Ser Pro Ser Ser Tyr Asn
 35          40          45

Thr Gln Pro Trp His Phe Val Met Val Thr Asp Lys Asp Leu Lys Lys
 50          55          60

Gln Ile Ala Ala His Ser Tyr Phe Asn Glu Glu Met Ile Lys Ser Ala
 65          70          75          80

Ser Ala Leu Met Val Val Cys Ser Leu Arg Pro Ser Glu Leu Leu Pro
      85          90          95

His Gly His Tyr Met Gln Asn Leu Tyr Pro Glu Ser Tyr Lys Val Arg
      100          105          110

Val Ile Pro Ser Phe Ala Gln Met Leu Gly Val Arg Phe Asn His Ser
      115          120          125

Met Gln Arg Leu Glu Ser Tyr Ile Leu Glu Gln Cys Tyr Ile Ala Val
      130          135          140

Gly Gln Ile Cys Met Gly Val Ser Leu Met Gly Leu Asp Ser Cys Ile
      145          150          155          160

Ile Gly Gly Phe Asp Pro Leu Lys Val Gly Glu Val Leu Glu Glu Arg
      165          170          175

Ile Asn Lys Pro Lys Ile Ala Cys Leu Ile Ala Leu Gly Lys Arg Val
      180          185          190

Ala Glu Ala Ser Gln Lys Ser Arg Lys Ser Lys Val Asp Ala Ile Thr
      195          200          205

Trp Leu
      210

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